

ASSESSMENT OF HERBICIDE ALACHLOR IMPACT ON SEED GERMINATION AND SEEDLING RELATED TRAITS OF SOYBEAN (JS-9305, DSB-21 AND JS-335) SEEDLINGS

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ABSTRACT

In the present investigation a study was carried out to appraise the effect of herbicide alachlor on seed germination and early seedling growth parameters of three soybean cultivars. The study was carried out in hydroponic conditions with different concentrations (1.0, 2.0, 4.0, 6.0 and 8.0 ppm) of herbicide. All the three cultivars of soybean were found to be significantly affected with herbicide as the concentration increased when compared to control. Percent germination, vigour index, tolerance index, fresh and dry weight, plumule and radicle length were found to be significantly decreased as the herbicide concentration increased, when compared to control. However the dry weight was found to be increased faintly at privileged application when compared to other concentrations. The percent toxicity augmented as the concentration of herbicide increased when compared to control. The present study evidently showed that higher concentrations of alachlor were found to be lethal to soybean, resulted in a turn down in seed germination and early seed growth parameters.

KEYWORDS: Herbicide, Toxicity, Tolerance Index, Soybean